

Cement causes skin problems in cement products workers because it is:

- alkaline or caustic
- hygroscopic
- abrasive

The pH of wet cement is 12 to 13 (see back panel) so it's **alkaline**. It is hygroscopic so it pulls moisture from skin. It is abrasive so its sharp particles scrape and cut skin.



Four main kinds of skin problems are caused by contact with portland cement.

**Dry skin** may include irritation, scaling, itchiness, burning, and redness.

**Irritant contact dermatitis (ICD)** can be acute or chronic. Symptoms include stinging, pain, itching, blisters, dead skin, scabs, scaling, fissures, redness, swelling, lumps, rash, and watery discharge.

**Allergic contact dermatitis (ACD)** includes many of the same symptoms as ICD. Hexavalent chromium in cement is a primary cause. ACD is difficult to cure and may persist for years.

**Cement burns** produce blisters, dead or hardened skin, or black or green skin. If you think you have a cement burn, go straight to the emergency room. By the time you feel the burn, much damage is already done. A cement burn continues to worsen even after you rinse off the cement.

## What Is pH?

pH tells us about the acidity or alkalinity of a material. Pure water has a pH of 7. pH 7 is considered pH-neutral.

The pH scale is like the Richter scale for earthquakes. Each number is many times greater/smaller than the previous number.

The pH Scale				
ACID				ALKALI
1	4.5	5.5	7	14
	Normal Skin		Pure Water	Cement

For every whole number, the pH changes 10-fold. The pH of wet cement is up to *one billion times* higher than the pH of skin.

Wet cement makes skin more alkaline. It is then defenseless against chemicals. It can absorb more hexavalent chromium. Skin damage may allow bacterial growth, causing infections that worsen problems.

Control surface skin pH by preventing contact with cement. Consider buffering or neutralizing any residue on the skin.

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## Professional Skin Protection for Cement Products Workers



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